* NOTICES *
Japan Patent Office is not responsible for any
damages caused by the use of this translation.
1. This document has been translated by computer.So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3.In the drawings, any words are not translated.

Bibliography.

---

(19) [Country of Issue] Japan Patent Office (JP)
(12) [Official Gazette Type] Open patent official report (A)
(11) [Publication No.] JP,2001-327650,A (P2001-327650A)
(43) [Date of Publication] November 27, Heisei 13 (2001. 11.27)
(54) [Title of the Invention] Game machine.
(51) [The 7th edition of International Patent Classification]
A63F 5/04 512

[FI]
A63F 5/04 512 A
512 D
[Request for Examination] Un-asking.
[The number of claims] 2.
[Mode of Application] OL.
[Number of Pages] 17.
(21) [Filing Number] Application for patent 2000-153602 (P2000-153602)
(22) [Filing Date] May 24, Heisei 12 (2000. 5.24)
(71) [Applicant]
[Identification Number] 598098526.
[Name] Aruze Corp.
[Address] 3-1-25, Ariake, Koto-ku, Tokyo.
(72) [Inventor(s)]
[Name] Okada Sum student.
[Address] 3-1-25, Ariake, Koto-ku, Tokyo A Ariake frontier buildings.
(74) [Attorney]
[Identification Number] 100081477.
[Patent Attorney]
[Name] Ditch ** (besides one person)

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any
damages caused by the use of this translation.
1. This document has been translated by computer.So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3.In the drawings, any words are not translated.

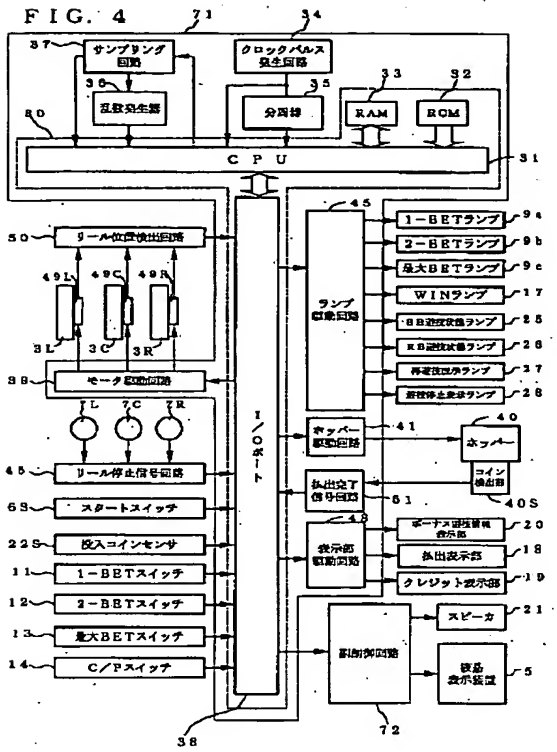
Summary.

---

(57) [Abstract]
[Technical problem] Production is ended, the request of wanting to start the following game, and a request that he wants to enjoy production certainly are filled, production can be canceled by a game person's selection and the game machine which has the function which can start the following game is offered.
[Means for Solution] Game machines are the reels 3L, 3C, and 3R which indicate two or more patterns required for a game by change a condition [predetermined game start operation]. Based on the halt operation by the role of internal success in an election and those [game] who are determined as the liquid crystal display 5 which performs production different from a display required for a game for every game at the predetermined time, halt control of the reels 3L, 3C, and 3R is carried out, and after the end of a change display, while the liquid crystal display 5 is performing the production display, it has the main-control circuit 71 carried out in game start operation as it is invalid. After the end of a change display, if a game person operates a start lever twice while the liquid crystal display 5 is performing the production display, the main-control circuit 71 will end a production display, and will confirm game start operation after that.

[Translation done.]

FIG. 4



[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1. This document has been translated by computer.So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] It is the game machine with which it has the following, and the aforementioned control means will end the aforementioned production, and will be characterized by confirming the account game start operation of back to front if a game person does predetermined operation while the aforementioned production means is directing after the end of the aforementioned change display. The change display means which indicates two or more patterns required for a game by change a

condition [predetermined game start operation]. A production means to perform production different from a display required for a game. They are the control means carry out the aforementioned game start operation as it is invalid while carrying out halt control of the change display of the aforementioned pattern and the aforementioned production means is directing after the end of the aforementioned change display based on the halt operation by the role of internal success in an election and those [game] who are determined for every game at the predetermined time.

[Claim 2] It is the game machine which is that the aforementioned predetermined operation performs the same operation two or more times in a game machine according to claim 1.

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to game machines, such as a slot machine equipped with electric display, such as mechanical display which consists of the reel by which a rotation drive is mechanically carried out by making two or more patterns into the change display means which indicates by change or liquid crystal, and Light Emitting Diode, CRT, especially about the game machine which controls a game mode using control units, such as a microcomputer.

[0002]

[Description of the Prior Art] For example, the game machine called a slot machine or a pachislot has the mechanical change display which arranged two or more reels which arranged two or more patterns on the periphery side, and constituted them in the front display window, or the electric change display constituted so that the pattern on a reel might be displayed in false.

[0003] In such a game machine, change display drives according to start operation of

a game person, and the change display of a pattern is performed by rotation operation of each reel. Halt control of this change display is automatically carried out one by one by halt operation of a game person for every reel after fixed time progress. And if the combination of the pattern (henceforth a "halt pattern") of each reel by which it is indicated by halt into a display window becomes a predetermined halt mode when all reels stop, game media, such as a medal and coin, will be paid out and it will become winning a prize to which game value is given to a game person. The multi-statement of the kind (role of winning a prize) of winning a prize from which game value differs is carried out to this winning a prize, and it is supposed that it will distinguish by the halt mode.

[0004] A mainstream model has two or more kinds of winning-a-prize modes now. Especially when a halt pattern becomes winning a prize applicable to the predetermined role of winning a prize, it does not finish with one expenditure of coin, but will be in a predetermined period and a game state with conditions more sufficient than the usual state. There are a role of special increase winning a prize (a "big bonus" is called and it is written as "BB" below) which the game which gives large profits relatively [person / game] as such a role of winning a prize can perform the number of predetermined times, and a role of winning a prize (a "regular bonus" is called and it is written as "RB" below) which obtains the game to which small profits are given relatively / person / game] the predetermined game of several lines

[0005] Moreover, that the combination of the pattern which constitutes the role of winning a prize gathers on an effective line when the reel which is rotating in a model mainstream now stops is the case where the role of winning a prize is won by the internal lottery of a game machine (when it specifically wins by the lottery by random number extraction with a microcomputer). This is for solving the problem that management of the rate of expenditure of the coin from a game machine etc. becomes difficult also for a game store while the result (victory or defeat) of a game will be decided, only a game person's skill will be emphasized and the soundness of a game will be spoiled by a game person's level of skill, if the halt mode of a pattern is determined only by halt operation (timing) of a game person.

[0006] Therefore, if the role of winning a prize is not won by the internal lottery (henceforth "internal success in an election"), however a game person may do halt operation also with the game machine (for example, slot machine equipped with an earth switch like a pachislot) of a type which can halt operate the reel by the game person, combination of the pattern applicable to the role of winning a prize cannot be placed neatly on an effective line.

[0007] Production which reports the role of internal success in an election etc. from the feature of such a game machine with the object of operation which performs operation and a display of an object, the emitter made to generate light, the loudspeaker which outputs sound, the display which displays a picture is performed. Such production is performed in order to raise the interest of a game, and after all

reels indicate by halt, it may be performed. A game result does not have a direct relation, and such production supports game operation of a game person, when it reports the role of internal success in an election etc., although a display usually required for a game is performed independently. In such a case, the game machine which repeals game start operation for performing the following game is offered until production is completed, in order to make production observe. On the other hand, before production is completed, even if it is, in order to meet the expectation of the game person who wishes to start the following game, the game machine which ends the production and enabled it to start the following game is offered.

[0008]

[Problem(s) to be Solved by the Invention] However, in the former game machine, the following game cannot be started until production is completed. For example, although there are some which report the role of internal success in an election as the above-mentioned production, an expert can recognize the role of internal success in an election based on halt operation of a reel and the halt mode of a reel, may not need the support by the above-mentioned production, and may sense the above-mentioned production tedious. Moreover, for a game store side, although the limit is prepared by law at the time from the end of the game of 1 to the start of the following game, it may have the dissatisfaction based on the number of games which can be carried out to per unit time decreasing by always repealing start operation of the following game exceeding the time. On the other hand, in spite of having observed the content of production when game start operation of the following game was performed accidentally since the production at that time was completed in order to direct the following game although the following game can be started with the latter game machine, if game start operation is performed, un-arranging [that the production cannot be enjoyed] arises. Only in the halt mode of a reel, since the role of internal success in an election etc. cannot be judged, especially a beginner tends to depend on the content of production, and it is thought large the un-arranging. Moreover, since an expert does not have performing [little] game start operation of the following game habitually after all reels stop, it thinks [that the production which was being observed cannot be enjoyed in many cases and] of him.

[0009] The purpose of this invention is offering the game machine which has the function which can end production, can fill the request of wanting to start the following game, and a request that he wants to enjoy production certainly, can cancel production by a game person's selection, and can start the following game.

[0010]

[Means for Solving the Problem] A change display means by which the 1st mode of this invention indicates two or more patterns required for a game by change a condition [predetermined game start operation], It is based on the halt operation by the role of internal success in an election and those [game] who are determined as a production means to perform production different from a display required for a game, for every game at the predetermined time. While halt control of the change

display of a pattern is carried out and the production means is directing after the end of a change display It has the control means which repeal game start operation, control means will end production, if a game person does predetermined operation while the production means is directing after the end of a change display, and it is characterized by confirming game start operation after that.

[0011] The 2nd mode of this invention is what predetermined operation performs the same operation for two or more times (for example, a start lever is struck twice).

[0012]

[Function and Effect] According to the 1st mode of this invention, control means end production after the end of a change display based on predetermined operation during the production of a production means, and confirm game start operation after that. For this reason, if predetermined operation is performed, a game person can stop the production judged to be unnecessary, and can start the following game. Moreover, since the operating ratio of a game machine can be raised, the request by the side of a game store can be filled. Moreover, even when game start operation of the following game is performed accidentally, since it does not end, production can enjoy production certainly.

[0013] According to the 2nd mode of this invention, predetermined operation performs the same operation two or more times. Therefore, a game can be performed in comfort from production not being canceled only by operating it once accidentally.

[0014]

[Embodiments of the Invention] Drawing 1 is the perspective diagram showing the appearance of the slot machine of one example of this invention. Although this slot machine 1 is a game machine which plays a game, using coin, a medal, or a token as a game medium, below, it is explained as what uses coin.

[0015] Panel display 2a as an abbreviation vertical plane is formed in the transverse plane of the cabinet 2 which forms the whole slot machine 1, and the display windows 4L, 4C, and 4R of a longwise rectangle are formed in the center. Five winning-a-prize lines (horizontally three aslant 2) 8 are formed in display windows 4L, 4C, and 4R. By throwing in operation of the 1-BET switch 11 explained later or one coin, one winning-a-prize line 8 is validated, by throwing in operation of the 2-BET switch 12 or two coin, three winning-a-prize lines 8 are validated, and five winning-a-prize lines 8 are validated by throwing in operation of the maximum BET switch 13 or three coin.

[0016] Three reels 3L, 3C, and 3R by which the pattern train constituted by each peripheral face with two or more kinds of patterns was drawn are formed in a horizontal single tier free [rotation], and form the change display means in the interior of a cabinet 2. The pattern of each reel can be observed now through display windows 4L, 4C, and 4R.

[0017] 1-BET lamp 9a, 2-BET lamp 9b, maximum BET lamp 9c, and the credit display 19 are formed in the left-hand side of display windows 4L, 4C, and 4R. 1-

BET lamp 9a, 2-BET lamp 9b, and maximum BET lamp 9c are turned on according to the number of the coin bet in order to perform the game of 1 (henceforth a "BET number"). A BET number is "1", and 1-BET lamp 9a is turned on when one winning-a-prize line 8 is validated. A BET number is "2", and 2-BET lamp 9b is turned on when three winning-a-prize lines 8 are validated. Maximum BET lamp 9c is turned on when the winning-a-prize line [all / a BET number / "3" / (5)] 8 is validated. The credit display 19 consists of the 7 segment Light Emitting Diode, and displays the number of sheets of the coin currently stored.

[0018] The WIN lamp 17 and the expenditure display 18 are formed in the right-hand side of display windows 4L, 4C, and 4R. In BB winning a prize or RB winning a prize, the light is switched on, and the WIN lamp 17 is turned on by predetermined probability, when internal success in an election is carried out at BB or RB. The expenditure display 18 consists of the 7 segment Light Emitting Diode, and displays the expenditure number of sheets of the coin at the time of winning a prize.

[0019] BB game state lamp 25, RB game state lamp 26, the re-game display lamp 27, and the game halt display lamp 28 are formed in the left-hand side upper part of panel display 2a. The light is switched on in BB game state, and BB game state lamp 25 turns on RB game state lamp 26 in RB game state. The re-game lamp 27 is turned on when a re-game (replay) occurs. The game halt display lamp 28 is turned on at the time of the time between the last game and this game (for example, up to the rotation start of the reel of this game from the rotation start of the reel of the last game) being under a predetermined time (for example, 4.1 seconds), the time of error generating, etc.

[0020] The bonus game information-display section 20 is formed in the right-hand side upper part of panel display 2a. The bonus game information-display section 20 consists of the 7 segment Light Emitting Diode, and displays the number of times of RB game possible and the number of times for which a prize can be RB game won which are explained later.

[0021] The plinth section 10 of the level surface is formed under the display windows 4L, 4C, and 4R, and the liquid crystal display 5 as an another display means to perform display with the another change display of a pattern train is formed among the plinth section 10 and display windows 4L, 4C, and 4R. Various animations are displayed on liquid crystal display screen 5a of this liquid crystal display.

[0022] A coin slot 22 is formed in the right-hand side of a liquid crystal display 5, and the 1-BET switch 11, the 2-BET switch 12, and the maximum BET switch 13 are formed in the left-hand side of a liquid crystal display 5. The coin of the maximum number of sheets [the 1-BET switch 11] which can bet the maximum BET switch 13 on 1 time of a game by risking two of the coin in which one of the coin in which the credit is carried out by one push operation is risked on a game, and the credit of the 2-BET switch 12 is carried out by one push operation on a game is bet. By operating these BET switches, the predetermined winning-a-prize line 8 is validated as above-mentioned.

[0023] The C/P switch 14 which switches the credit/expenditure of the coin which the game person gained in the game by push button operation is formed in the left of the front section of the plinth section 10. The coin which coin paid out of the coin expenditure mouth 15 of the transverse-plane lower part, and was paid out by the change of this C/P switch 14 is accumulated in the coin receptacle section 16. On the right-hand side of the C/P switch 14, the above-mentioned reel is rotated by operation of a game person, and the start lever 6 for starting the change display of the pattern within display windows 4L and 4C and 4R is attached free [rotation] in the predetermined angle range. If the start lever 6 is operated twice during the production display after [all] a reel halt, the "production forced-termination command" explained later will be outputted.

[0024] In the center of the front section of the plinth section 10, three earth switches 7L, 7C, and 7R for stopping rotation of three reels 3L, 3C, and 3R, respectively are formed in the lower part position of a liquid crystal display 5. Loudspeakers 21L and 21R are formed in upper right and left of a cabinet 2, and the dividend table panel 23 which displays the combination of a winning-a-prize pattern, the dividend number of sheets of coin, etc. is formed in them between two sets of the loudspeakers 21L and 21R.

[0025] Drawing 2 shows the pattern trains 29L, 29C, and 29R expressed with the peripheral face of Reels 3L, 3C, and 3R. Each pattern trains 29L, 29C, and 29R arrange two or more kinds of 21 patterns, and are constituted. In this example, as shown in this drawing 2 , seven kinds of patterns, "7 (pattern 61)", "a punch top (pattern 62)", "the bottom of punch (pattern 63)", "a punching ball (pattern 64)", "a bell (pattern 65)", "a cherry (pattern 66)", and "revenge (pattern 67)", are established. A code number is attached and it is stored in ROM32 (drawing 4) of "1"-"21" explained as a pattern table later at each pattern. The rotation drive of each reels 3L, 3C, and 3R is carried out so that a pattern train may move in the direction of an arrow of drawing.

[0026] In the game machine 1 of an example, a game person can perform a game to the "general game state" which is in the usual game state, "BB", or "RB" in "the interior success-in-an-election game state of a bonus" which is in the state which carried out internal success in an election, "BB game state" where many coin can be gained, and "RB game state."

[0027] When "7 (pattern 61 of drawing 2)-7-7", a "punch top (pattern 62 of drawing 2)-punch top-punch top", and "the bottom of bottom of bottom of punch (pattern 63 of drawing 2)-punch-punch" are located in a line along with the winning-a-prize line (henceforth an "effective line") validated in the "general game state", it becomes BB winning a prize. When it comes to BB winning a prize, a game state is changed into "BB game state." "BB game state" is in the game state most advantageous to a game person, and is constituted by "RB game state" described below and the "general BB game state" where there is winning-a-prize possibility of "the role of small." In this example, in "BB game state", "RB game state" can carry

out generating a maximum of 3 times (this is called "number of times which can be RB maximum generated"), and the inside of "general BB game state" can perform a maximum of 30 times of games.

[0028] The inside of "general BB game state" "Role winning a prize of small of a punching ball", "role winning a prize of small of a bell", When "a punch top (pattern 62 of drawing 2)" of reel 3L of the left besides "role winning a prize of small of a cherry" or "the bottom of punch (pattern 63 of drawing 2)" stops in the position of one of effective lines Regardless of the display mode of central display window 4C and right display window 4R, it becomes "role winning a prize of small of the role of five sheet" which five coin pays out.

[0029] When the "punch top-punch top -7" or the "bottom -7 of bottom of punch-punch" is located in a line along with an effective line in a "general game state", it becomes RB winning a prize and 15 coin pays out. "RB game state" is in the game state of being easy to hit the bonus game (for it to be called a JAC game) from which a predetermined pattern combination "revenge-revenge-revenge" can gain a set and 15 coin, by betting one coin. In 1 time of "RB game state", the number of times (this is called "number of times of RB game possible") of the greatest possible game is 12 times. Moreover, in this game state, the maximum possible number of times of winning a prize (this is called "number of times for which a prize can be RB game won") is 8 times. That is, this "RB game state" is ended, when the number of times of a game amounts to 12 times or the number of times of winning a prize amounts to 8 times. Here, it has called it "accessory winning a prize" to win a prize of the above-mentioned JAC game generally.

[0030] Drawing 3 is drawing showing the picture displayed on liquid crystal display screen 5a. In this example, the animation showing signs that a hero ("RYUJI" is called below) 90 performs boxing with the waging-war partner ("SHARK" is called below) 91 is displayed on liquid crystal display screen 5a. Indicators 94L and 94R are displayed on the upper part field of liquid crystal display screen 5a with the face of 90 and 91, respectively. Left indicator 94L expressed with the face of 90 expresses the amount of damages which 90 received by 91. Right indicator 94R expressed with the face of 91 expresses the amount of damages which 91 received by 90. When the amount of damages which left indicator 94L or right indicator 94R shows becomes the maximum, signs that either 90 or 91 is knocked out are displayed.

[0031] Here, in this example, the production display in liquid crystal display screen 5a is performed predetermined time, after all the reels 3L, 3C, and 3R stop. When this production display is performed and all the reels 3L, 3C, and 3R stop, the game start operation for starting the following game by the game person will be in the state where it was presupposed that it was invalid. In this state, when a game person does operation (for example, it pushes down) of the start lever 6 twice, the game start operation for starting the following game becomes effective. Specifically, during the production display after [all] a reel halt, if the start lever 6 is operated twice where coin is bet, operation of the start lever 6 for starting a game will

become effective. Moreover, the production display in liquid crystal display screen 5a started after [all] the reel halt is compulsorily ended at this time. When signs that either 90 or 91 is knocked out after predetermined-time progress are displayed and a production display is completed after the production display was started even if operation of the start lever 6 is the case where there is nothing, a 2 times line crack, game start operation becomes effective. In addition, in this example, the production display by which 91 is knocked out while carrying out internal success in an election (the interior success-in-an-election game state of a bonus is included) is performed to "BB" or "RB", and when other, the production display by which 90 is knocked out is performed.

[0032] Drawing 4 shows circuitry including the sub control circuit 72 which controls a liquid crystal display 5 and a loudspeaker 21 based on the peripheral device (actuator) electrically connected to the main-control circuit 71 which controls game processing operation in the game machine 1, and the main-control circuit 71, and the control command transmitted from the main-control circuit 71.

[0033] The main-control circuit 71 makes a main component the microcomputer 30 arranged on the circuit board, adds the circuit for a random number sampling to this, and is constituted.

[0034] A microcomputer 30 achieves the function as the role determination means of internal success in an election, and a winning-a-prize judging means, and contains CPU31 which performs control action according to the program set up beforehand, and ROM32 and RAM33 which are a storage means.

[0035] The clock pulse generating circuit 34 and counting-down circuit 35 which generate a criteria clock pulse, the random number generator 36 which generates the random number sampled, and the sampling circuit 37 are connected to CPU31. In addition, as a means for a random number sampling, you may constitute so that a random number sampling may be performed within a microcomputer 30 (i.e., on the program of CPU31 of operation). In this case, it is also possible to be able to omit a random number generator 36 and a sampling circuit 37, or to leave as an object for backup of a random number sampling action.

[0036] The various control commands (command) for transmitting to the data used for the judgment of the random number sampling performed whenever it operates the start lever 6, or the sub control circuit 72 are stored in ROM32 of a microcomputer 30. There are a "game state command", "the role command of internal success in an election", the "1st halt command", the "2nd halt command", the "3rd halt command", a "winning-a-prize command", a "production forced-termination command", etc. as this command. Various commands are explained later.

[0037] In the circuit of drawing 4 , as main actuators with which operation is controlled by the control signal from a microcomputer 30 Various lamps (a maximum of 1-BET lamp 9a, 2-BET lamp 9b, BET lamp 9c, the WIN lamp 17, BB game state lamp 25, RB game state lamp 26, the re-game display lamp 27, the game halt display lamp 28), Various displays (the expenditure display 18, the credit display 19, bonus

game information-display section 20), The coin of a game medium is contained and there are the hopper (the mechanical component for expenditure is included) 40 as a game value grant means which pays out the coin of predetermined number of sheets by the instruction of the hopper drive circuit 41, and stepping motors 49L, 49C, and 49R which carry out the rotation drive of the reels 3L, 3C, and 3R.

[0038] Furthermore, the motorised circuit 39 which carries out drive control of the stepping motors 49L, 49C, and 49R, the hopper drive circuit 41 which carries out drive control of the hopper 40, the lamp drive circuit 45 which carries out drive control of the various lamps, and the display drive circuit 48 which carries out drive control of the various displays are connected to the output section of CPU31 through I/O Port 38. These drive circuits control operation of each actuator in response to control signals, such as drive instructions outputted from CPU31, respectively.

[0039] Moreover, as main input signal generating meanses to generate an input signal required since a microcomputer 30 generates a control command, there are injection coin sensor 22S, start switch 6S, the 1-BET switch 11, the 2-BET switch 12 or the maximum BET switch 13, the C/P switch 14, the reel stop signal circuit 46, the reel position detector 50, and a completion signal circuit 51 of expenditure. These are also connected to CPU31 through I/O Port 38.

[0040] Injection coin sensor 22S detect the coin thrown into the coin slot 22. Start switch 6S detect operation of the start lever 6. The reel stop signal circuit 46 generates a stop signal according to operation of each earth switches 7L, 7C, and 7R. The reel position detector 50 supplies the signal for detecting the position of each reels 3L, 3C, and 3R in response to the pulse signal from a reel rotation sensor to CPU31. The completion signal circuit 51 of expenditure generates the signal for detecting the completion of coin expenditure, when the number-of-sheets data with which the enumerated data (number of sheets of the coin paid out of the hopper 40) of coin detecting-element 40S was specified are reached.

[0041] In the circuit of drawing 4 , a random number generator 36 generates the random number belonging to the fixed numerical range, and a sampling circuit 37 samples one random number to the proper timing after the start lever 6 was operated. In this way, the role of the interior success in an election of a winning-a-prize probability table shell stored in ROM32 is determined using the sampled random number.

[0042] After rotation of Reels 3L, 3C, and 3R is started, counting of the number of the driving pulses supplied to each of stepping motors 49L, 49C, and 49R is carried out, and the enumerated data is written in the predetermined area of RAM33. A reset pulse is obtained from Reels 3L, 3C, and 3R for every one revolution, and these pulses are inputted into CPU31 through the reel position detector 50. In this way, the enumerated data of the driving pulse by which counting is carried out by RAM33 is cleared by the obtained reset pulse "0." Thereby, in RAM33, the enumerated data corresponding to the rotation position of one revolution within the

limits is stored about each reels 3L, 3C, and 3R.

[0043] Since the rotation position of the above reels 3L, 3C, and 3R and the pattern drawn on the reel peripheral face are matched, the pattern table is stored in ROM32. On this pattern table, as shown in above-mentioned drawing 2 on the basis of the rotation position which the reset pulse mentioned above generates, the code number given one by one for every fixed rotation pitch of each reels 3L, 3C, and 3R and the pattern code which shows the pattern established by corresponding for every code number are matched.

[0044] Furthermore, in ROM32, the winning-a-prize pattern combination table is stored. On this winning-a-prize pattern combination table, the combination of the pattern which is winning a prize, the coin dividend number of sheets of winning a prize, and the winning-a-prize judging code showing the winning a prize are matched.

[0045] The above-mentioned winning-a-prize pattern combination table is referred to when performing the winning-a-prize check the time of halt control of left reel 3L, central reel 3C, and right reel 3R, and after [all] a reel halt.

[0046] When internal success in an election is carried out by lottery processing (probability lottery processing) based on the above-mentioned random number sampling, CPU31 sends the signal which carries out halt control of the reels 3L, 3C, and 3R based on the manipulate signal sent from the reel stop signal circuit 46 to the timing to which the game person operated earth switches 7L, 7C, and 7R to the motorised circuit 39. Here, CPU31, earth switches 7L, 7C, and 7R, the reel stop signal circuit 46, and the motorised circuit 39 constitute halt control means.

[0047] And if it becomes the halt mode which shows winning a prize, CPU31 will supply an expenditure command signal to the hopper drive circuit 41, and will pay the coin of the predetermined number out of a hopper 40. Counting of the number of sheets of the coin which pays coin detecting-element 40S out of a hopper 40 in that case is carried out, and when the number with which the enumerated data was specified is reached, the completion signal of coin expenditure is inputted into CPU31. Thereby, CPU31 stops the drive of a hopper 40 through the hopper drive circuit 41, and ends expenditure processing of coin.

[0048] Drawing 5 shows the composition of the sub control circuit 72. The sub control circuit 72 performs the display control of a liquid crystal display 5, and the output control of the sound from a loudspeaker 21 based on the control command (command) from the main-control circuit 71. This sub control circuit 72 is constituted on the circuit board other than the circuit board which constitutes the main-control circuit 71, makes a microcomputer (henceforth a "sub microcomputer") 73 a main component, and consists of a sound source IC 78 which controls the picture control circuit 81 as a display-control means of a liquid crystal display 5, and the output sound from a loudspeaker 21, and power amplification 79 as amplifier.

[0049] The sub microcomputer 73 contains the program ROM 75 and Work RAM 76 as a storage means with the factice CPU 74 who performs control action according

to the control command transmitted from the main-control circuit 71. Although it does not have the clock pulse generating circuit, the counting-down circuit, the random number generator, and the sampling circuit, the sub control circuit 72 is constituted so that a random number sampling may be performed on a factice's CPU 74 program of operation.

[0050] The control program performed as a factice CPU 74 stores a program ROM 75. A work RAM 76 is a temporary storage means when performing the above-mentioned control program as a factice CPU 74.

[0051] The picture control circuit 81 consists of the picture control CPU 82, picture control program ROM84, the picture control work RAM 83, picture control IC 88, a picture ROM 86, and Video RAM 87. The picture control CPU 82 determines the content of a display in a liquid crystal display 5 along with the picture control program stored in picture control program ROM84 based on the parameter set up with the sub microcomputer 73. Picture control program ROM84 stores the picture control program and the various selection tables about a display in a liquid crystal display 5. The picture control work RAM 83 is constituted as a temporary storage means when performing the above-mentioned picture control program by the picture control CPU 82. The picture control IC 88 forms the picture according to the content of a display determined by the picture control CPU 82, and outputs it to a liquid crystal display 5. A picture ROM 86 stores the dot data for forming a picture. Video RAM 87 consists of picture control IC 88 as a temporary storage means when forming a picture.

[0052] In the game machine 1 of an example, a game person can perform a game in the "general game state" which is in the usual game state, "BB game state" where many coin can be gained, and "RB game state."

[0053] Drawing 6 shows the "table number selection table" prepared in ROM32 of the main-control circuit 71. In each game state, the role of internal success in an election in which internal success in an election is possible is shown in the "table number selection table." The "table number" of either of "00"- "12" corresponds to each role of internal success in an election. In the "content determination table of production" (drawing 7) explained below, a "table number" is used in order to determine "a definite partition" and a "wait timer number." Here, a "table number selection table" is used in processing of ST7 of drawing 9 explained later.

[0054] Drawing 7 shows the "content determination table of production" prepared in ROM32 of the main-control circuit 71. The "table number", the "random number value", the "definite partition", and the "wait timer number" are shown in "the content determination table of production." On this the "content determination table of production", "a definite partition" and a "wait timer number" are chosen based on a "table number" and a "random number value." A "table number" is chosen on a "table number selection table." A "random number value" is extracted in the range of "0"- "16383." "A definite partition" shows whether the WIN lamp 17 is turned on. When "a definite partition" is "1", the WIN lamp 17 is made to turn on

and the light is not made to specifically switch on at the time of "0." A "wait timer number" shows time (wait timer setup time) to maintain the state of repealing game start operation for starting the following game by the game person, after all the reels 3L, 3C, and 3R stop. This time is equal to time to perform a production display by liquid crystal display screen 5a. Here, "the content determination table of production" is used in processing of ST7 of drawing 9 explained later.

[0055] Drawing 8 shows the "wait timer setup time" which ** "a wait timer number" shows. When a "wait timer number" is "0", the "wait timer setup time" is "0 second." In this case, game start operation becomes effective after [all] a reel halt, and a production display is not performed in liquid crystal display screen 5a. When a "wait timer number" is "1", the "wait timer setup time" is "4.5 seconds." When a "wait timer number" is "2", the "wait timer setup time" is "12.5 seconds." When a "wait timer number" is "3", the "wait timer setup time" is "21.0 seconds." The "wait timer setup time" is set to a "wait timer" in processing of ST17 of drawing 10 explained later.

[0056] Next, the control action of CPU31 of the main-control circuit 71 is explained with reference to the flow chart shown in drawing 9 - drawing 11 .

[0057] In introduction drawing 9 , CPU31 distinguishes the present game state (1 [step / [it is hereafter written as ST]]), and the "game state command" which includes the distinction result as information is transmitted to the sub control circuit 72 (ST2). Next, it distinguishes whether CPU31 has an input from whether coin was received, or not injection coin sensor 22S [11], i.e., a 1-BET switch, the 2-BET switch 12, or the maximum BET switch 13 (ST3). When this distinction is "YES", it distinguishes whether there is any input from start switch 6S by having operated the start lever 6 (ST4). When this distinction is "YES", "probability lottery processing" is performed (ST5). In "probability lottery processing", the role of internal success in an election is determined by collating the random number value sampled for every game with the data in the winning-a-prize probability table set up beforehand. Next, CPU31 transmits "the role command of internal success in an election" which contains as information the role of internal success in an election determined by "probability lottery processing" to the sub control circuit 72 (ST6).

[0058] Next, CPU31 performs "the content determination processing of production" based on the role of internal success in an election determined by "probability lottery processing" (ST7). In "the content determination processing of production", based on the role of internal success in an election determined by the game state and Above ST 5 which were distinguished by the above ST 1, one a "table number" is chosen from the "table number selection table" shown in drawing 6 , and the column corresponding to the table number which carried out [above-mentioned] selection in "the content determination table of production" shown in drawing 7 is referred to. And a random number value is extracted in [random number value] 0-16383, and "a definite partition" and a "wait timer number" are determined. For example, when internal success in an election is carried out in the state of a general

game at BB, the random number value which the table number "12" was chosen from the table number selection table of drawing 6 , and was extracted is chosen as "a definite partition" from the content determination table of production of drawing 7 , and "1" is chosen as "1" and a "wait timer number" at the time of either 120-319. "The definite partition" chosen here shows whether the WIN lamp 17 is turned on, and is used for the distinction in ST32 (drawing 11) explained later. Next, CPU31 transmits the "content command of production" which contains as information "the definite partition" and the "wait timer number" which were determined by ST7 to the sub control circuit 72 (ST8).

[0059] Next, CPU31 rotates Reels 3L, 3C, and 3R (ST9). Then, according to push operation of the earth switches 7L, 7C, and 7R by the game person, halt control of each reels 3L, 3C, and 3R is carried out. That is, if halt control of the inside reel 3C will be carried out according to this if halt control of the left reel 3L will be carried out according to this if there is push operation of left earth-switch 7L by the game person, and there is push operation of inside earth-switch 7C, and there is push operation of right earth-switch 7R, according to this, halt control of the right reel 3R will be carried out. Moreover, a game person is decided arbitrarily and every one operational sequence of three earth switches 7L, 7C, and 7R is operated. Hereafter, "the 2nd halt operation" and the 3rd push operation are called [the 1st push operation by the game person] "3rd halt operation" for "the 1st halt operation" and the 2nd push operation. Moreover, the reel by which halt control was carried out at the "2nd halt reel" and the last in the reel by which halt control was carried out in the reel by which halt control was carried out the "1st halt reel" and the 2nd is said to the 1st as the "3rd halt reel."

[0060] Next, CPU31 distinguishes whether the stop signal based on the 1st halt operation occurred from whether there is any 1st halt operation and the reel stop signal circuit 46 (ST10). When this distinction is "YES", the "1st halt command" including the information (that information which is any of Reels 3L, 3C, and 3R) about the 1st halt reel is transmitted to the sub control circuit 72 (ST11).

[0061] Next, as shown in drawing 10 , CPU31 distinguishes whether the stop signal based on the 2nd halt operation occurred from whether there is any 2nd halt operation and the reel stop signal circuit 46 (ST12). When this distinction is "YES", the "2nd halt command" including the information about the 2nd halt reel is transmitted to the sub control circuit 72 (ST13). Next, CPU31 distinguishes whether the stop signal based on the 3rd halt operation occurred from whether there is any 3rd halt operation and the reel stop signal circuit 46 (ST14). When this distinction is "YES", the "3rd halt command" including the information about the 3rd halt reel is transmitted to the sub control circuit 72 (ST15). Next, CPU31 distinguishes whether the "wait timer number" determined by the "content determination processing of production" of ST7 is "0" (ST16). When this distinction is "YES", it shifts to processing of ST23 of drawing 11 explained later, and moves to processing of ST17 at the time of "NO."

[0062] In processing of ST17, CPU31 sets the "wait timer setup time" (drawing 8) according to the "wait timer number" to a wait timer. The value of the set wait timer is updated by the predetermined time interval in interrupt processing which is not illustrated.

[0063] Next, CPU31 cancels game start operation (ST18). (lock) Specifically, operation of the start lever 6 in the state of being about each BET switches 11, 12, and 13 and the input from injection coin sensor 22S is repealed. Namely, although probability lottery processing (ST5), reel rotation processing (ST9), etc. are performed in this example based on the input from start switch 6S a condition [there having been each BET switches 11, 12, and 13 or an effective input from injection coin sensor 22S] Though the start lever 6 is operated and there is an input from start switch 6S where game start operation is cancelled, probability lottery processing, reel rotation processing, etc. do not have a lameness crack.

[0064] Next, it distinguishes whether the start lever 6 was operated twice or more, or CPU31 had two inputs or more from start switch 6S (ST19). When this distinction is "YES", a "production forced-termination command" is transmitted to the sub control circuit 72 (ST20), and it moves to processing of ST22. It distinguishes whether when distinction of ST19 is "NO", the value of a wait timer is "0" (ST21), and when this distinction is "YES", it moves to processing of ST22 and moves to processing of ST19 at the time of "NO." In processing of ST22, CPU31 validates game start operation, i.e., operation of the start lever 6 in the state where coin was bet, (lock release). Here, when distinction of ST19 is "YES", game start operation is validated irrespective of the value of a wait timer.

[0065] Next, as shown in drawing 11 , CPU31 performs winning-a-prize judging and coin expenditure processing (ST23). In this winning-a-prize judging and coin expenditure processing, when the predetermined pattern which is winning a prize along with an effective line is located in a line, the coin according to the role of winning a prize is paid out. Next, CPU31 distinguishes whether the distinction result of ST1 is in BB or RB game state (ST24). When this distinction is "YES", it moves to processing of ST25 and moves to processing of ST28 at the time of "NO." In processing of ST25, CPU31 performs BB or number-of-times check processing of RB game. In the case of BB game state, by this number-of-times check processing of a game, the number of times which RB game state generated, the number of times of a game of general BB game state, the number of times of winning a prize in RB game state, and the number of times of a game in RB game state are checked. In the case of RB game state, by the number-of-times check processing of a game, the number of times of winning a prize in RB game state and the number of times of a game are checked.

[0066] Next, it distinguishes whether it is CPU31 at the end time of BB game state or RB game state (ST26). Specifically, in BB game state, in 3rd RB game state, the number of times of winning a prize is [8 times or the number of times of a game] 12 times, or it distinguishes whether the number of times of a game is 30 times in

general BB game state. If it is in RB game states other than BB game state, the number of times of winning a prize will distinguish whether 8 times or the number of times of a game is 12 times. When distinction of ST26 is "YES", it moves to processing of ST27 and moves to processing of ST28 at the time of "NO." In processing of ST27, CPU31 makes a game state a general game state, and it moves from it to processing of ST28 of drawing 11 .

[0067] Next, it distinguishes whether CPU31 is BB winning a prize (ST28). When this distinction is "YES", a game state is made into general BB game state (ST29), and it moves to processing of ST30 at the time of "NO." In processing of ST30, it distinguishes whether it is RB winning a prize. When this distinction is "YES", a game state is made into RB game state (ST31), and it moves to processing of ST32. In processing of ST32, "the definite partition" which determined CPU31 by the "contents determination processing of production" of ST7 distinguishes whether it is "1." When this distinction is "YES", it moves to processing of ST33 and moves to processing of ST34 at the time of "NO." In processing of ST33, CPU31 performs lighting processing of the WIN lamp 17. Then, CPU31 performs 1 game end processing (ST34). In this 1 game end processing, specification of the starting address of elimination of the data of the area of RAM33 used for this game which can be written in, the writing to the write-in area of RAM of a parameter required for a next game, and the sequence program of a next game etc. is performed.

[0068] Next, the control action of the factice CPU 74 of the sub control circuit 72 is explained with reference to drawing 12 and drawing 13 .

[0069] Introduction and a factice CPU 74 distinguish whether the game state command was received (ST41). When this distinction is "YES", it moves to processing of ST42. Here, the command which the sub control circuit 72 received is stored in the work area of a work RAM 76 by receiving command storing processing (not shown). In processing of ST42, a factice CPU 74 distinguishes whether it is in BB game state (ST42), and when this distinction is "YES", he performs "BB production display processing" (ST43) which is processing of the determination of the content of production in BB game state etc. It distinguishes whether when distinction of ST42 is "NO", it is in RB game state (ST44), and when this distinction is "YES", "RB production display processing" is performed (ST45), and it moves to processing of ST46 at the time of "NO."

[0070] Next, a factice CPU 74 distinguishes whether the role command of internal success in an election was received (ST46), and when this distinction is "YES", he moves to processing of ST47. In processing of ST47, a factice CPU 74 distinguishes whether the contents command of production was received (ST47), and when this distinction is "YES", he distinguishes whether all reels stopped (ST48). Specifically, it distinguishes whether the 3rd halt command was received. When this distinction is "YES", it moves to the processing of ST49 shown in drawing 13 .

[0071] In the processing of ST49 shown in drawing 13 , a wait timer number distinguishes a factice CPU 74 based on the contents command of production in

which it was stored in the work area whether it is "0." When this distinction is "YES", control processing is ended and it moves to processing of ST50 at the time of "NO." In processing of ST50, a factice CPU 74 performs production display processing. Specifically, based on a game state, the role of internal success in an election, and a wait timer number, the contents of production by the liquid crystal display 5 are determined, and a liquid crystal display 5 is controlled based on a determination result. For example, a wait timer number is "1", when a game state is [the interior success-in-an-election game state of a bonus or the role of internal success in an election] "BB" or "RB", production time is "4.5 seconds" and the production which knocks out a waging-war partner is chosen.

[0072] Next, a factice CPU 74 distinguishes whether the production forced-termination command was received (ST51). When this distinction is "YES", forced-termination processing of the production in a liquid crystal display 5 is performed (ST52), and processing is ended. The processing as which it is indicated in drawing 11 when this distinction is "YES" is ended by distinguishing whether production [in / a liquid crystal display 5 / when distinction of ST51 is "NO" / in a factice CPU 74] was completed (ST53), and it moves to processing of ST51 at the time of "NO."

[0073] As mentioned above, although the example was explained, this invention is not restricted to this.

[0074] Although the liquid crystal display is used as a production means, you may make it use luminescence (for a Light Emitting Diode dot matrix to be included) of the lamp arranged at operation of a doll, the reel for production, etc., generating of sound, the upper part of a display window, or the circumference other than a liquid crystal display, Light Emitting Diode, etc. in the above-mentioned example. Moreover, when applying this invention to the game machine equipped with the electric change display constituted so that the pattern on a reel might be displayed in false, you may make it use electric change display as a change display means and a production means. That is, you may be made to perform a false display and production display of the pattern on a reel on the display screen of 1 with which electric change display was equipped.

[0075] Moreover, although [an example] it directs only after all reels stop based on the 3rd halt operation, you may be made to direct to the rotation middle class of a reel. In this case, when the production started based on the operation before the 3rd halt operation continues after the 3rd halt operation and is performed, you may make it force this production based on two operations of the start lever 6 to terminate.

[0076] As operation which validates game start operation although [an example] a start lever is operated twice, you may make it validate game start operation by one operation of a BET switch, a stop button, etc. or operation of multiple times. Moreover, you may make it validate game start operation with the combination of operation of a start lever, a BET switch, a stop button, etc. of the existing control

unit. Or you may prepare the control unit of the exclusive use for validating game start operation.

[0077] Moreover, operation of a start lever is repealed and also it may be made to repeal operation of a BET switch or the coin injection (game start operation) to a coin slot. In the case of the latter, the thrown-in coin is returned.

[0078] Although game start operation is validated by two operations of a start lever in the example when game start operation is invalid, the 1st operation is saved as effective game start operation between the two operation, and it may be made to carry out rotation of a reel etc. simultaneously with the end of production. Thereby, a game person can save the time and effort of waiting for the end of production and performing game start operation.

[0079] Moreover, you may make it input the signal from start switch 6S into the sub control circuit 72 directly (** which does not mind the main-control circuit 31). In this case, when production is being performed after all reels stop, the sub control circuit 72 can end the production spontaneously based on the signal from start switch 6S. That what is necessary is just to validate game start operation (lock release), since the main-control circuit 31 does not need to transmit a "production forced-termination command" to the sub control circuit 72, it can mitigate the burden of the main-control circuit 31.

[Translation done.]

* NOTICES *

Japan Patent Office is not responsible for any damages caused by the use of this translation.

1.This document has been translated by computer. So the translation may not reflect the original precisely.

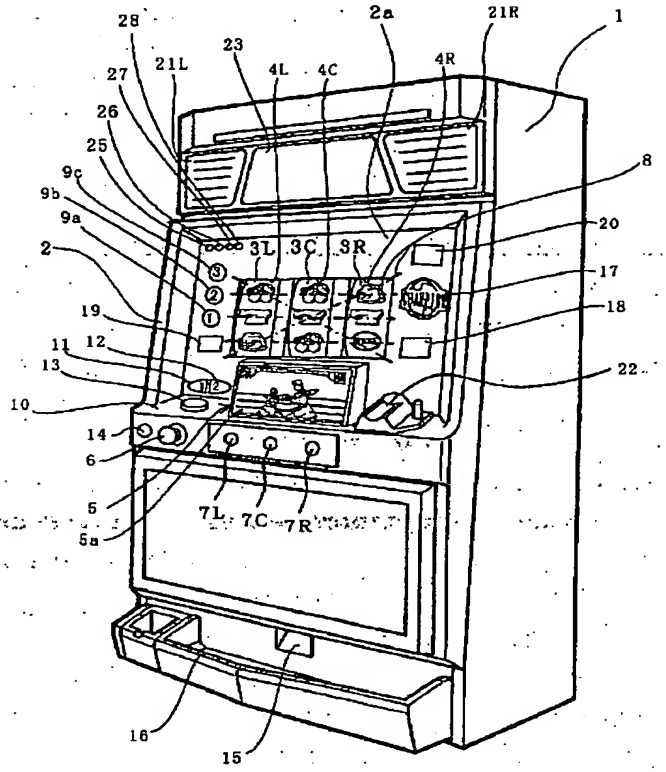
2.**** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DRAWINGS

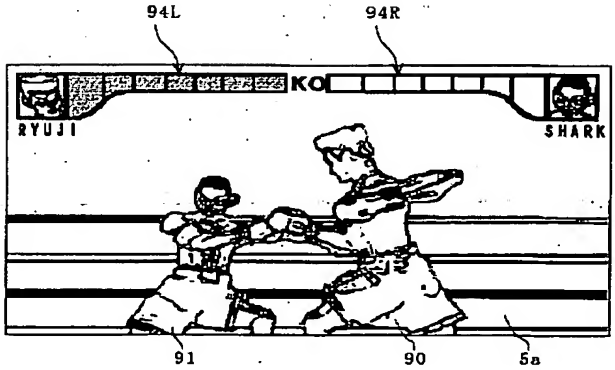
[Drawing 1]

FIG. 1



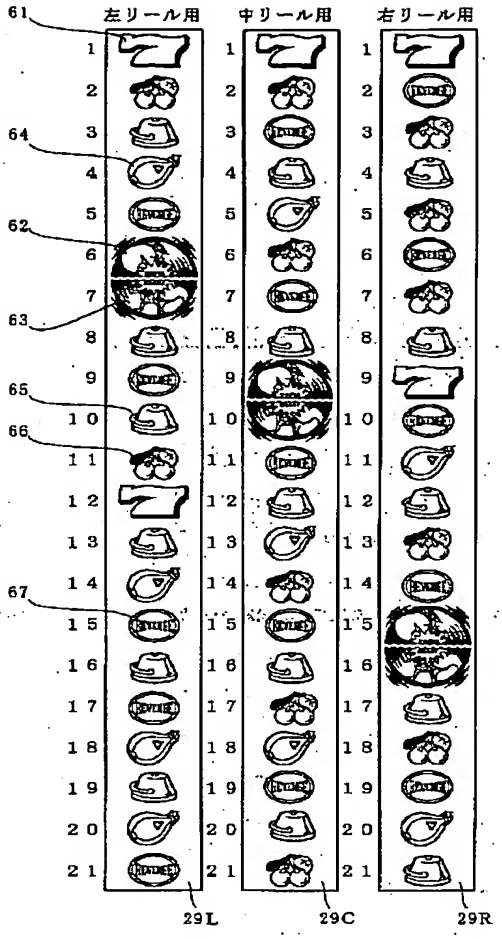
[Drawing 3]

FIG. 3



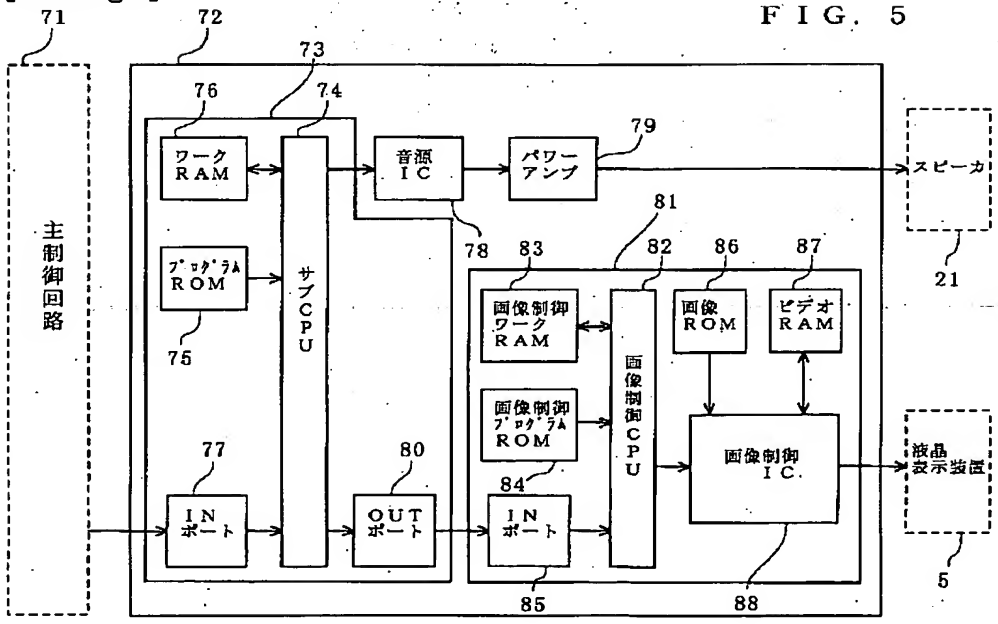
[Drawing 2]

F I G. 2



[Drawing 5]

F I G. 5



[Drawing 6]
ＦＩＧ．６
テーブル番号選択テーブル

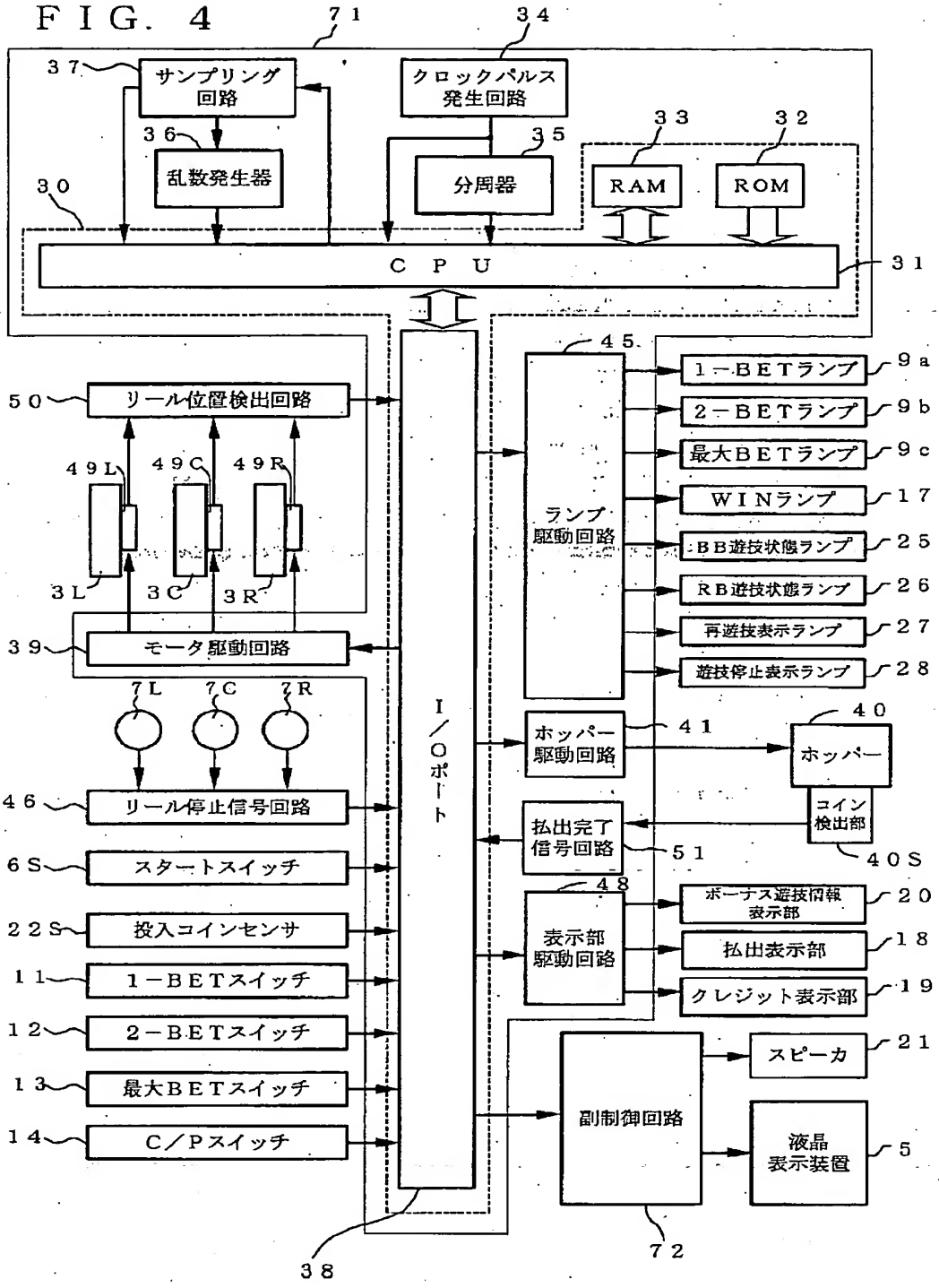
遊技状態	内部当選役	テーブル番号
ＢＢ一般遊技状態	ＲＢ	００
	その他	０１
一般遊技状態	再遊技	０２
	パンチング	０３
	ベル	０４
	チェリー	０３
	５枚役	０５
	ＢＢ	１２
	ＲＢ	１２
	はずれ	０６
ボーナス内部当選遊技状態	再遊技	０７
	パンチング	０８
	ベル	０９
	チェリー	１０
	５枚役	１１
	はずれ	１２
ＲＢ遊技状態	全状態	０１

[Drawing 8]
ＦＩＧ．８

ウェイトタイマ番号	ウェイトタイマ設定時間
０	０秒
１	４．５秒
２	１２．５秒
３	２１．０秒

[Drawing 4]

FIG. 4



[Drawing 7]

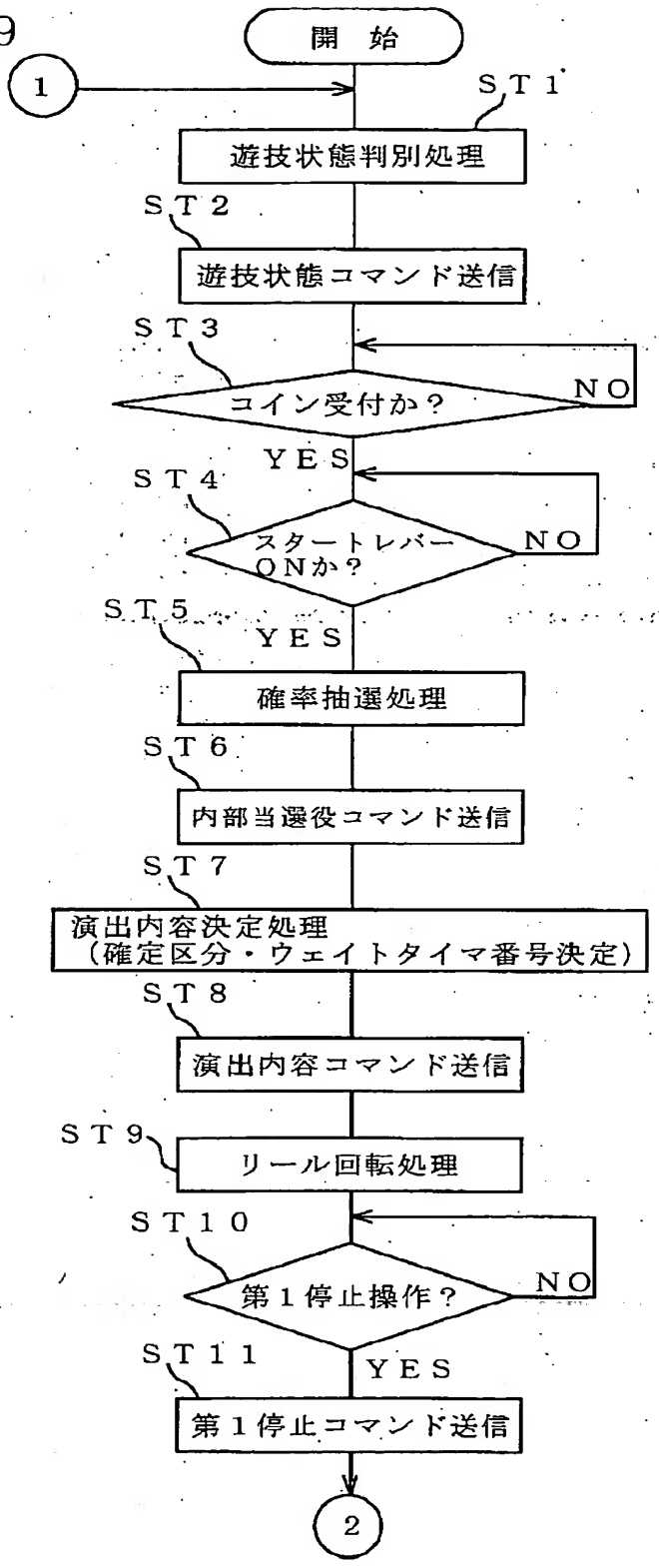
FIG. 7

抽出内容決定テーブル

テーブル番号	乱数値		確定区分	ウェイトタイマ番号
00	0 ～	16383	0	0
01	0 ～	16383	0	0
02	0 ～	9999	0	1
	10000 ～	10499	0	2
	10500 ～	16383	0	0
03	0 ～	7999	0	0
	8000 ～	8999	0	1
	9000 ～	9999	0	2
	10000 ～	16383	0	0
04	0 ～	1999	0	0
	2000 ～	7999	0	1
	8000 ～	8499	0	3
	8500 ～	16383	0	0
05	0 ～	6999	0	0
	7000 ～	7103	0	1
	7104 ～	7603	0	2
	7604 ～	9603	0	3
	9604 ～	16383	0	0
06	0 ～	9999	0	0
	10000 ～	10049	0	1
	10050 ～	10065	0	2
	10066 ～	16383	0	0
07	0 ～	999	1	0
	1000 ～	1199	1	1
	1200 ～	2199	0	3
	2200 ～	16383	0	0
08	0 ～	3999	0	3
	4000 ～	5999	1	3
	6000 ～	7999	1	1
	8000 ～	9999	1	0
	10000 ～	16383	0	0
09	0 ～	1999	0	2
	2000 ～	9999	1	3
	10000 ～	16383	0	0
10	0 ～	999	0	0
	1000 ～	1103	1	1
	1104 ～	1207	1	2
	1208 ～	1507	0	3
	1508 ～	16383	0	0
11	0 ～	3999	0	0
	4000 ～	5999	0	2
	6000 ～	7999	1	1
	8000 ～	9999	1	3
	10000 ～	16383	0	0
12	0 ～	15	0	0
	16 ～	119	0	2
	120 ～	319	1	1
	320 ～	619	1	2
	620 ～	723	0	3
	724 ～	923	1	0
	924 ～	1027	0	1
	1028 ～	16383	0	0

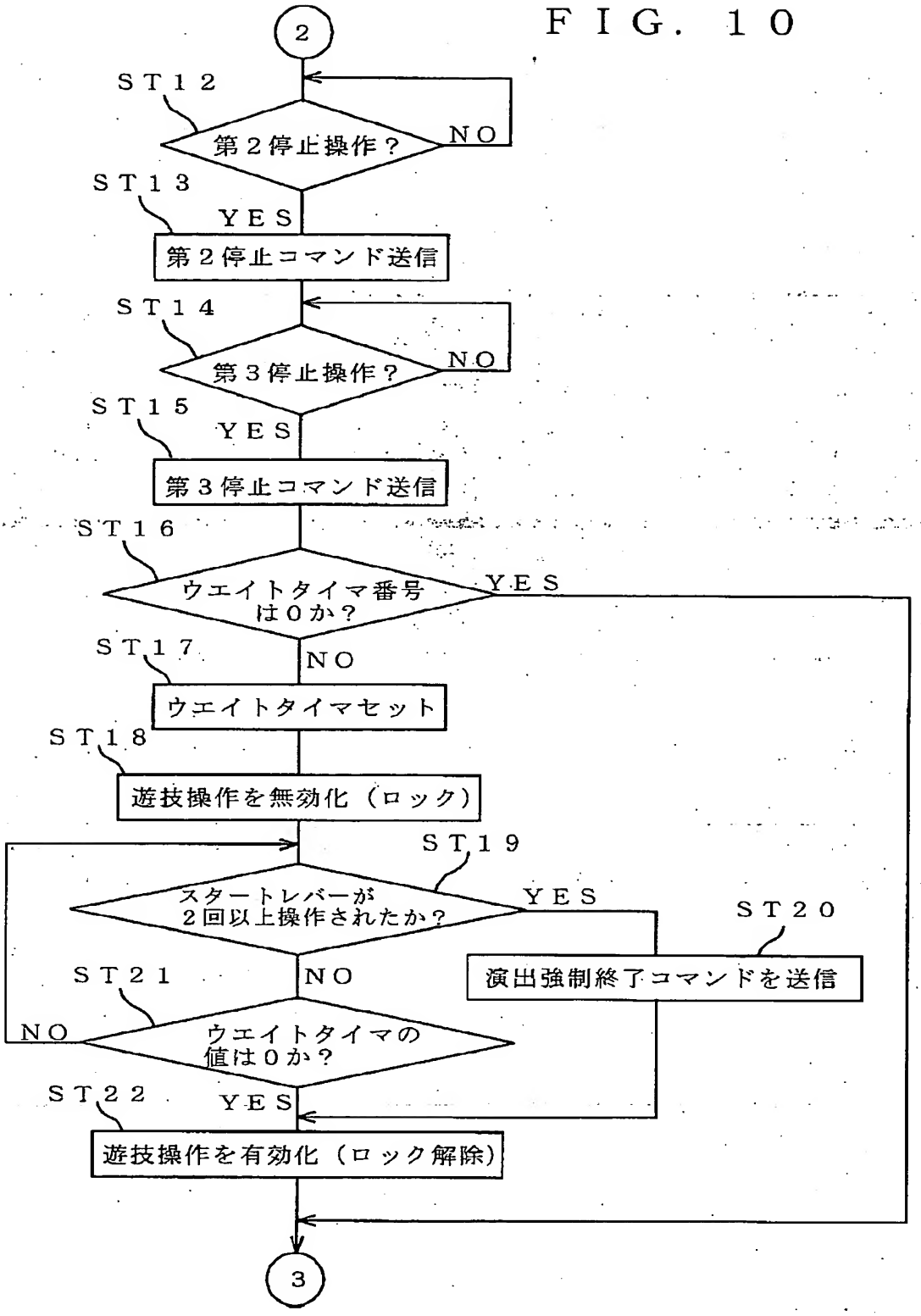
[Drawing 9]

FIG. 9



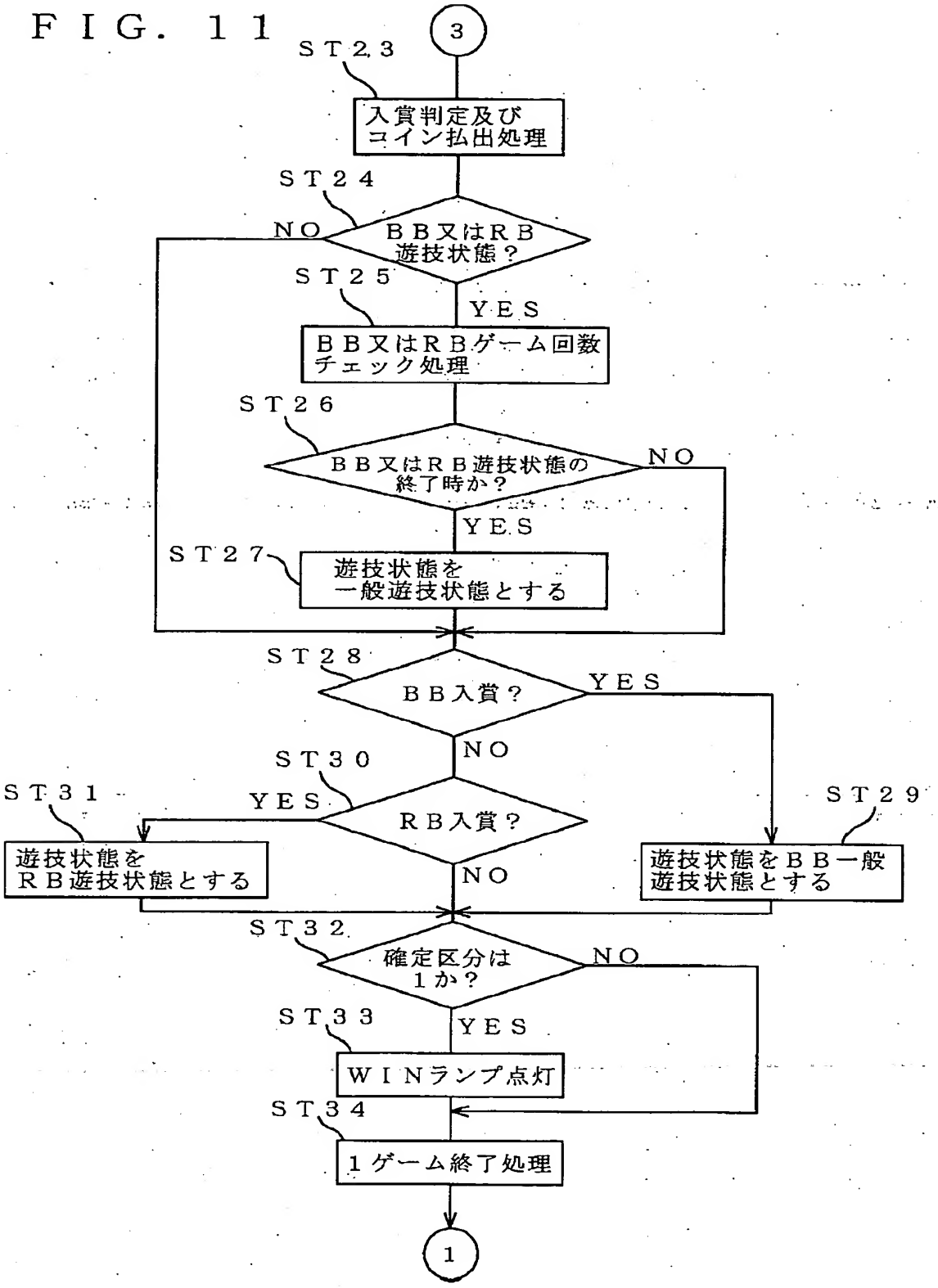
[Drawing 10]

FIG. 10



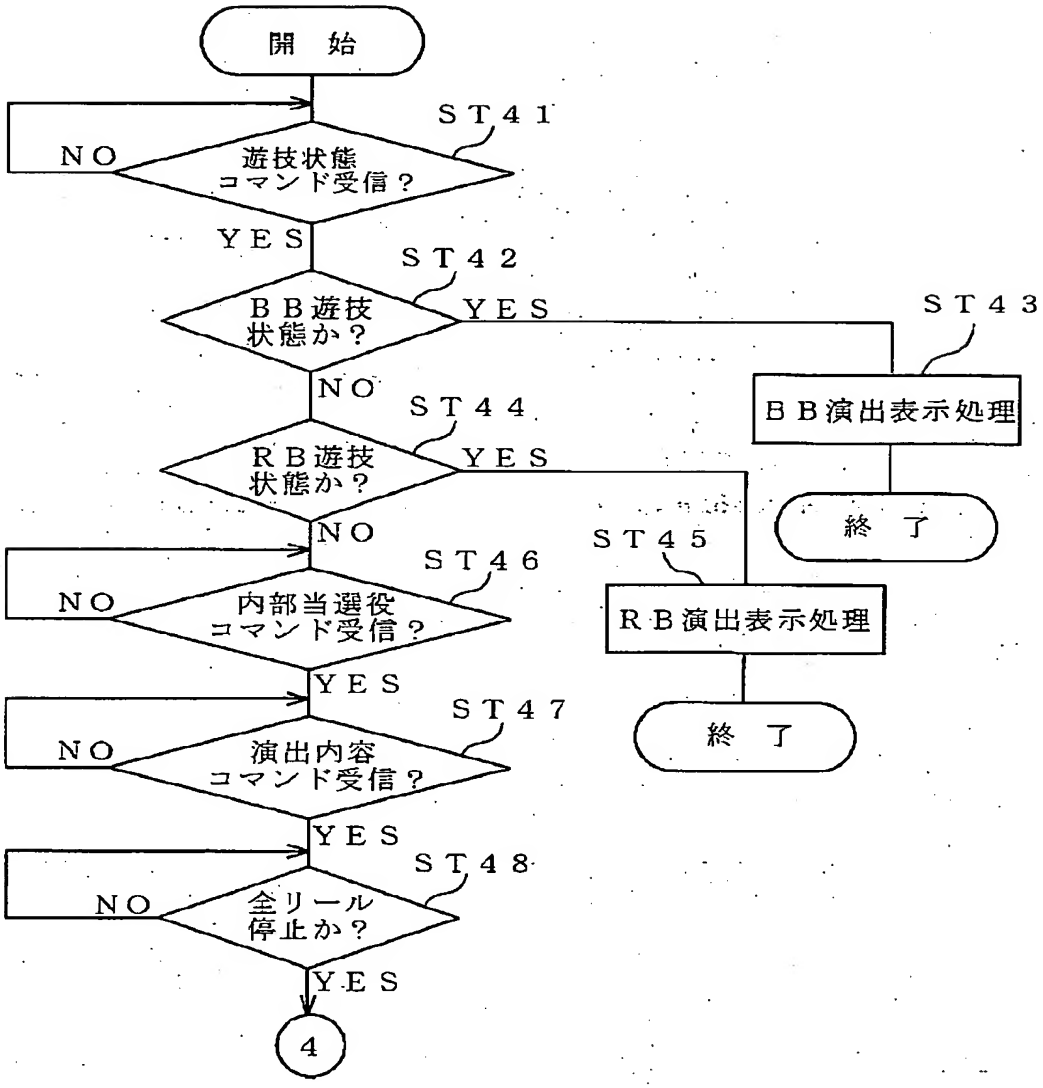
[Drawing 11]

FIG. 11



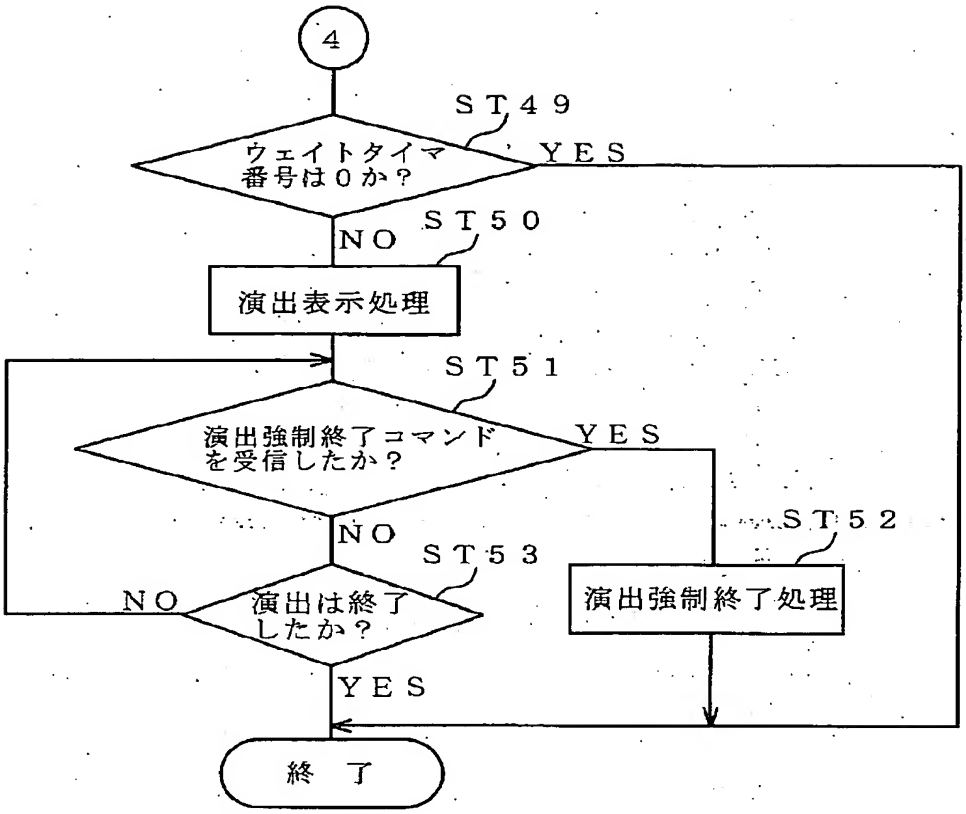
[Drawing 12]

FIG. 12



[Drawing 13]

FIG. 13



[Translation done.]